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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,575

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Paul A. Manfredi

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SUITE 304

ANNAPOLIS, MD 21401

EXAMINER

WATSON, JOY L

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/709,575	Applicant(s) MANFREDI, PAUL A.	
	Examiner JOY WATSON	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10-14,21,22,24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10-14,21,22,24 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 12, 2007 has been entered.

Response to Arguments

2. Applicant's arguments filed December 12, 2007, have been fully considered but they are not persuasive.

3. In response to applicant's argument that the "vertically oriented" fins are supported in applicant's Specification, the applicant fails to show the examiner where the orientation is supported in the argument. The examiner assumes that a typographical error was made and applicant attempted to point examiner to Figure 3. The rejection remains because Figure 3 does not give any indication to the orientation of the fins with respect to the apparatus as a whole.

Art Unit: 1792

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Also Yang and Mahvan teach shields that prevent undesirable material from being deposited on said substrate. Yang's shield does not surround the substrate, but Mahvan's does. One of ordinary skill in the art would have recognized that by surrounding Yang's shield around the entire substrate, bounce back could be prevented around the entire circumference. It would have been obvious to one of ordinary skill in the art use a shield as taught by Yang and modify the shape in order to surround the substrate as taught by Mahvan. Using a known technique such as surrounding the substrate with a shield in order to prevent undesired material from being deposited on said substrate would have been obvious to one of ordinary skill in the art.

5. In response to applicant's argument that the functional recitation that prior art does not teach a shield that eliminates back splatter onto the wafer surface, '843 teaches a sponge (semi-permeable material) which is capable of preventing undesired material from being redeposited on said substrate. Additionally "...a mist and being redeposited into a mist and being re-deposited back on said substrate." is not a

Art Unit: 1792

positively recited structural feature of the claimed apparatus. It has been help that a recitation with respect to the manner in which acclaimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations . *Ex parte Masham*, 2 USPQ2d 1647 (1987)

6. In response to applicant's argument that neither Yang nor Mahvan teaches a semi-permeable material having absorptive fins, Yang teaches a semi-permeable material (a sponge) having absorptive fins (projections or corrugations) (col. 2 lines 63-65). Regarding the recitation " [S]aid absorptive fins prevents said cleaning fluid and said foreign matter particles from forming into a mist and being re-deposited back on said semiconductor wafer", this recitation is a statement of intended use which does not patentably distinguish over Yang since Yang meets all the structural elements of the claim and is capable of preventing said cleaning fluid and said foreign matter particles from forming into a mist and being re-deposited back on said semiconductor wafer. See MPEP 2114.

7. In response to applicant's argument that neither Yang nor Mahvan teach or suggest the proposed amended features of Claims 21, the examiner respectfully disagrees. '843 (Yang) teaches a holder (21) for holding a rotating a semiconductor substrate (22), a shield for the substrate (27) where the surface of said shield is semi-permeable (31), and a dispenser (24) to dispense solvent (cleaning fluid) on said substrate (12) (col. 2 lines 40-67). It is inherent that when the dispenser dispenses a

Art Unit: 1792

fluid on said substrate the fluid and foreign matter particles are ejected from said substrate towards said shield ('843, col. 2 lines 18-22). Additionally '843 teaches that the semi-permeable material prevents fluid ejected from the surface of the rotating substrate from forming into a mist and being re-deposited back on said substrate (col. 3 lines 1-8). Additionally '843 teaches said semi-permeable material made of a sponge material (a protective covering that serves to conceal) and faces said substrate (col. 2 lines 63-65, Fig. 3). The sponge material serves as a protective covering that serves to conceal (definition of screen) and is porous (definition of opening). It does not explicitly teach that the material is disposable, but it does teach that the semi-permeable material can be removed for maintenance when desired (col. 3 lines 37-39) because the semi-permeable material is capable of being removed it is disposable because it can be throw away. Additionally '843 teaches the semi-permeable material can be removed; therefore, it is able to be replaced if desired.

'843 does not teach that the shield surrounds the substrate. At the time of the invention one of ordinary skill in the art would have known that the fluid dispensed on said substrate would splash and bounce back onto the substrate ('843 col. 2 lines 18-22) and the particles that bounce back are undesirable. '071 (Mahvan) teaches shields (Fig. 1 items 26, 28, 30) that surrounds the substrate in order to capture sputtered material and prevent it from being deposited on the substrate (col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the shape of the shield (which completely surrounds the substrate) as taught by '071, in the shield of '843, since a shield which completely surrounds the substrate captures extra material

and prevents it from re-depositing on the substrate. It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

8. In response to applicant’s argument that Yang does not teach a liner, Yang teaches “...The corrugated piece of sponge 31 is substantially equal in length to the mounting piece 32 so as to cover [or line] the whole inner side of the same.” (Yang col. 2 lines 62-65).

9. In response to applicant’s argument that prior art does not teach an absorptive fin, Yang teaches a “corrugated piece of sponge” (col. 2 lines 54-67, Fig. 3 item 31) (reads on absorptive sponge). It is inherent that a sponge is an absorptive material and also that a corrugated piece of sponge has fins.

10. In response to applicant’s argument that the Yang does not teach fins the examiner notes that corrugations (or parallels folds as stated by applicant in the correspondence filed December 12, 2007) resemble fins, and the “fins” are outward projections that are fixed as seen in Figure 3 and 4.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 1792

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The application does not support the claimed screen material further comprising of fins.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1, 2, 4-7, 8, 10, 11-14, 21-22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Patent 5,868,843 known hereafter as '843) and further in view of Mahvan et al. (US Patent 5,614,071 known hereafter as '071).

Claims 1 and 8

'843 teaches a holder (21) for holding a rotating a semiconductor substrate (22), a shield for the substrate (27) where the surface of said shield is semi-permeable (31), and a dispenser (24) to dispense solvent (cleaning fluid) on said substrate (12) (col. 2 lines 40-67). It is inherent that when the dispenser dispenses a fluid on said substrate the fluid and foreign matter particles are ejected from said substrate towards said shield ('843, col. 2 lines 18-22). Additionally '843 teaches that the semi-permeable material prevents fluid ejected from the surface of the rotating substrate from forming into a mist and being re-deposited back on said substrate (col. 3 lines 1-8). '843 does teach the surface of said shield facing said semiconductor wafer comprises semi-permeable material (or sponge) having absorptive fins (projections or corrugations) (col. 2 lines 63-65). '843 does not teach that the shield surrounds the substrate. At the time of the invention one of ordinary skill in the art would have known that the fluid dispensed on said substrate would splash and bounce back onto the substrate ('843 col. 2 lines 18-22) and the particles that bounce back are undesirable. '071 teaches shields (Fig. 1 items 26, 28, 30) that surrounds the substrate in order to capture sputtered material and

Art Unit: 1792

prevent it from being deposited on the substrate (col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the shape of the shield (which completely surrounds the substrate) as taught by '071, in the shield of '843, since a shield which completely surrounds the substrate captures extra material and prevents it from re-depositing on the substrate. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claim 10

'843 and '017 teaches the apparatus according to Claim 8, additionally '843 teaches a vertically orientated fin ('843 col. 2 lines 63-65) as previously discussed. One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have been obvious to one of ordinary skill in the art. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 2 and 11

'843 and '071 teaches the apparatus according to Claim 1, and additionally '843 teaches said semi permeable material to have perforations (dents or depressions)

Art Unit: 1792

facing said substrate (col. 2 lines 63-65, Fig. 3). '843 further teaches a sponge as the semi permeable membrane which inherently has perforations.

Claim 4

'843 and '071 teaches the apparatus according to Claim 1, and additionally '843 teaches said semi permeable material to have fins (projections or corrugations) (31, Fig. 3, col. 2 lines 63-65, Fig. 4 an overhead view of the apparatus, item 31). One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have been obvious to one of ordinary skill in the art. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 5 and 12

'843 and '017 teaches the apparatus according to Claim 1. Additionally it teaches that the semi-permeable material can be removed from said shield (col. 3 lines 35-39). It does not explicitly teach that the material is disposable, but it does teach that the semi-permeable material can be removed for maintenance when desired (col. 3 lines 37-39) because the semi-permeable material is capable of being removed it is disposable because it can be throw away. Additionally '843 teaches the semi-permeable material

Art Unit: 1792

can be removed; therefore, it is able to be replaced if desired. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 6 and 13

'843 and '071 teaches the apparatus according to Claim 1 where the semi-permeable material is required to prevent the liquid material from forming a mist and re-depositing the mist on the wafer (col. 2 lines 18-22). '843 teaches that the semi-permeable material is attached to the mounting plate and stays in place during use. The material is permanently attached so as not to be removed until the equipment is down for maintenance and therefore not a temporary structure which is replaced after a single use or during use of the equipment.

Claim 7 and 14

'843 and '071 teaches the apparatus according to Claim 1 where the semi-permeable material is a sponge. This apparatus rotates and dispenses a fluid on said substrate the excess fluid will be flung onto the sponge. It is inherent that the sponge will collect said fluid. The fluid will then begin to drain down said semi-permeable material due to gravity.

Claim 21

Art Unit: 1792

'843 teaches a holder (21) for holding a rotating a semiconductor substrate (22), a shield for the substrate (27) where the surface of said shield is semi-permeable (31), and a dispenser (24) to dispense solvent (cleaning fluid) on said substrate (12) (col. 2 lines 40-67). It is inherent that when the dispenser dispenses a fluid on said substrate the fluid and foreign matter particles are ejected from said substrate towards said shield ('843, col. 2 lines 18-22). Additionally '843 teaches that the semi-permeable material prevents fluid ejected from the surface of the rotating substrate from forming into a mist and being re-deposited back on said substrate (col. 3 lines 1-8). Additionally '843 teaches said semi-permeable material made of a sponge material (a protective covering that serves to conceal) and faces said substrate (col. 2 lines 63-65, Fig. 3). The sponge material serves as a protective covering that serves to conceal (definition of screen) and is porous (definition of opening). It does not explicitly teach that the material is disposable, but it does teach that the semi-permeable material can be removed for maintenance when desired (col. 3 lines 37-39) because the semi-permeable material is capable of being removed it is disposable because it can be throw away. Additionally '843 teaches the semi-permeable material can be removed; therefore, it is able to be replaced if desired.

'843 does not teach that the shield surrounds the substrate. At the time of the invention one of ordinary skill in the art would have known that the fluid dispensed on said substrate would splash and bounce back onto the substrate ('843 col. 2 lines 18-22) and the particles that bounce back are undesirable. '071 teaches shields (Fig. 1 items 26, 28, 30) that surrounds the substrate in order to capture sputtered material and prevent it

Art Unit: 1792

from being deposited on the substrate (col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the shape of the shield (which completely surrounds the substrate) as taught by '071, in the shield of '843, since a shield which completely surrounds the substrate captures extra material and prevents it from re-depositing on the substrate. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claim 22

'843 and '017 teaches the apparatus according to Claim 8, additionally '843 teaches fins ('843 col. 2 lines 63-65) as previously discussed. One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have been obvious to one of ordinary skill in the art. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138

Claim 24

'843 and '017 teaches the apparatus according to Claim 8, additionally '843 teaches fins made from a sponge ('843 col. 2 lines 63-65).

Claim 26

'843 and '071 teaches the apparatus according to Claim 21 where the semi-permeable material is a sponge. This apparatus rotates and dispenses a fluid on said substrate the excess fluid will be flung onto the sponge. It is inherent that the sponge will collect said fluid. The fluid will then begin to drain down said semi-permeable material due to gravity. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOY WATSON whose telephone number is (571)270-1267. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1792

/Michael Cleveland/

Supervisory Patent Examiner, Art Unit 1792